

IN THE CLAIMS:

Please amend claims

1. (Currently Amended) A method of manufacturing a semiconductor device, comprising the steps of:

forming a crystalline semiconductor film containing a metal element over a transparent substrate;

irradiating ~~with~~ a first laser beam to the crystalline semiconductor film in a direction from the crystalline semiconductor film to the substrate after forming the crystalline semiconductor film; and

irradiating ~~with~~ a second laser beam to the crystalline semiconductor film through the substrate in a direction from the substrate to the crystalline semiconductor film after irradiating ~~with~~ the first laser beam.

2. (Original) A method of manufacturing a semiconductor device according to claim 1, wherein the first laser beam is a pulsed laser beam having a wavelength range from a visible region to a vacuum ultraviolet region, and the second laser beam is a pulsed or continuous wave laser beam having a wavelength range from a visible region to a vacuum ultraviolet region.

3. (Original) A method of manufacturing a semiconductor device according to claim 1, wherein each of the first and second laser beams is emitted from a laser selected from the group consisting of a gas laser, a solid-state laser, and a metal laser.

4. (Original) A method of manufacturing a semiconductor device according to claim 1, wherein the first laser beam is emitted from a laser selected from the group consisting of an excimer laser, a glass laser, a ruby laser, an alexandrite laser, a Ti: sapphire laser, a copper vapor laser, and a gold vapor laser.

5. (Original) A method of manufacturing a semiconductor device according to claim 4, wherein the excimer laser is selected from the group consisting of a XeCl excimer laser, a KrCl excimer laser, an ArF excimer laser, a KrF excimer laser, and a XeF excimer laser.

6. (Original) A method of manufacturing a semiconductor device according to claim 1, wherein the first laser beam is emitted from a laser selected from the group consisting of second, third, or fourth harmonics of a YAG laser, a YVO₄ laser, and a YLF laser.

7. (Original) A method of manufacturing a semiconductor device according to claim 1, wherein the second laser beam is emitted from a laser selected from the group consisting of an excimer laser, an Ar laser, a Kr laser, a glass laser, a ruby laser, an alexandrite laser, a Ti: sapphire laser, a He-Cd laser, a copper vapor laser, and a gold vapor laser.

8. (Original) A method of manufacturing a semiconductor device according to claim 7, wherein the excimer laser is selected from the group consisting of a XeCl excimer laser, a KrCl excimer laser, an ArF excimer laser, a KrF excimer laser, and a XeF excimer laser.

9. (Original) A method of manufacturing a semiconductor device according to claim 1, wherein the second laser beam is emitted from a laser selected from the group consisting of second, third, and fourth harmonics of a YAG laser, a YVO₄ laser, and a YLF laser.

10. (Currently Amended) A method of manufacturing a semiconductor device, comprising the steps of:
forming an amorphous semiconductor film over a transparent substrate;
adding a metal element to the amorphous semiconductor film followed by

heating thereby forming a crystalline semiconductor film after forming the amorphous semiconductor film;

irradiating ~~with~~ a first laser beam to the crystalline semiconductor film in a direction from the crystalline semiconductor film to the substrate, thereby melting and crystallizing the crystalline semiconductor film after adding the metal element; and

irradiating ~~with~~ a second laser beam to the crystalline semiconductor film through the substrate in a direction from the substrate to the crystalline semiconductor film, thereby melting and crystallizing the crystalline semiconductor film after irradiating ~~with~~ the first laser beam.

11. (Original) A method of manufacturing a semiconductor device according to claim 10, wherein the first laser beam is a pulsed laser beam having a wavelength range from a visible region to a vacuum ultraviolet region, and the second laser beam is a pulsed or continuous wave laser beam having a wavelength range from a visible region to a vacuum ultraviolet region.

12. (Original) A method of manufacturing a semiconductor device according to claim 10, wherein each of the first and second laser beams is emitted from a laser selected from the group consisting of a gas laser, a solid-state laser, and a metal laser.

13. (Original) A method of manufacturing a semiconductor device according to claim 10, wherein the first laser beam is emitted from a laser selected from the group consisting of an excimer laser, a glass laser, a ruby laser, an alexandrite laser, a Ti: sapphire laser, a copper vapor laser, and a gold vapor laser.

14. (Original) A method of manufacturing a semiconductor device according to claim 13, wherein the excimer laser is selected from the group consisting of a XeCl excimer laser, a KrCl excimer laser, an ArF excimer laser a KrF excimer laser, and a XeF excimer laser.

15. (Original) A method of manufacturing a semiconductor device according to claim 10, wherein the first laser beam is emitted from a laser selected from the group consisting of second, third, or fourth harmonics of a YAG laser, a YVO₄ laser, and a YLF laser.

16. (Original) A method of manufacturing a semiconductor device according to claim 10, wherein the second laser beam is emitted from a laser selected from the group consisting of an excimer laser, an Ar laser, a Kr laser, a glass laser, a ruby laser, an alexandrite laser, a Ti: sapphire laser, a He-Cd laser, a copper vapor laser, and a gold vapor laser.

17. (Original) A method of manufacturing a semiconductor device according to claim 16, wherein the excimer laser is selected from the group consisting of a XeCl excimer laser, a KrCl excimer laser, an ArF excimer laser, a KrF excimer laser, and a XeF excimer laser.

18. (Original) A method of manufacturing a semiconductor device according to claim 10, wherein the second laser beam is emitted from a laser selected from the group consisting of second, third, or fourth harmonics of a YAG laser, a YVO₄ laser, and a YLF laser.

19. (Currently Amended) A method of manufacturing a semiconductor device, comprising the steps of:

forming an amorphous semiconductor film over a transparent substrate;

adding a metal element to the amorphous semiconductor film followed by heating thereby forming a crystalline semiconductor film after forming the amorphous semiconductor film;

irradiating ~~with~~ a first laser beam to the crystalline semiconductor film in a direction from the crystalline semiconductor film to the substrate, thereby melting and crystallizing the crystalline semiconductor film after adding the metal element; and

irradiating ~~with~~ a second laser beam to the crystalline semiconductor film

through the substrate in a direction from the substrate to the crystalline semiconductor film, thereby reducing defects in the crystalline semiconductor film after irradiating ~~with~~ the first laser beam.

20. (Original) A method of manufacturing a semiconductor device according to claim 19, wherein the first laser beam is a pulsed laser beam having a wavelength range from a visible region to a vacuum ultraviolet region, and the second laser beam is a pulsed or continuous wave laser beam having a wavelength range from a visible region to a vacuum ultraviolet region.

21. (Original) A method of manufacturing a semiconductor device according to claim 19, wherein each of the first and second laser beams is emitted from a laser selected from the group consisting of a gas laser, a solid-state laser, and a metal laser.

22. (Original) A method of manufacturing a semiconductor device according to claim 19, wherein the first laser beam is emitted from a laser selected from the group consisting of an excimer laser, a glass laser, a ruby laser, an alexandrite laser, a Ti: sapphire laser, a copper vapor laser, and a gold vapor laser.

23. (Original) A method of manufacturing a semiconductor device according to claim 22, wherein the excimer laser is selected from the group consisting of a XeCl excimer laser, a KrCl excimer laser, an ArF excimer laser, a KrF excimer laser, and a XeF excimer laser.

24. (Original) A method of manufacturing a semiconductor device according to claim 19, wherein the first laser beam is emitted from a laser selected from the group consisting of second, third, or fourth harmonics of a YAG laser, a YVO₄ laser, and a YLF laser.

25. (Original) A method of manufacturing a semiconductor device according to claim 19, wherein the second laser beam is emitted from a laser selected from the group consisting of an excimer laser, an Ar laser, a Kr laser, a glass laser, a ruby laser, an alexandrite laser, a Ti: sapphire laser, a He-Cd laser, a copper vapor laser, and a gold vapor laser

26. (Original) A method of manufacturing a semiconductor device according to claim 25, wherein the excimer laser is selected from the group consisting of a XeCl excimer laser, a KrCl excimer laser, an ArF excimer laser, a KrF excimer laser, and a XeF excimer laser.

27. (Original) A method of manufacturing a semiconductor device according to claim 19, wherein the second laser beam is emitted from a laser selected from the group consisting of second, third, and fourth harmonics of a YAG laser, a YVO₄ laser, and a YLF laser.

28. (Currently Amended) A method of manufacturing a semiconductor device, comprising the steps of:

- forming an amorphous semiconductor film over a transparent substrate;
- adding a metal element to the amorphous semiconductor film followed by heating thereby forming a crystalline semiconductor film after forming the amorphous semiconductor film;

- irradiating ~~with~~ a first laser beam to the crystalline semiconductor film in a direction from the crystalline semiconductor film to the substrate after adding the metal element; and

- irradiating ~~with~~ a second laser beam to the crystalline semiconductor film through the substrate in a direction from the substrate to the crystalline semiconductor firm after irradiating ~~with~~ the first laser beam.

29. (Original) A method of manufacturing a semiconductor device according to claim 28, wherein the first laser beam is a pulsed laser beam having a wavelength range from a visible region to a vacuum ultraviolet region, and the second laser beam is a pulsed or continuous wave laser beam having a wavelength range from a visible region to a vacuum ultraviolet region.

30. (Original) A method of manufacturing a semiconductor device according to claim 28, wherein each of the first and second laser beams is emitted from a laser selected from the group consisting of a gas laser, a solid-state laser, and a metal laser.

31. (Original) A method of manufacturing a semiconductor device according to claim 28, wherein the first laser beam is emitted from a laser selected from the group consisting of an excimer laser, a glass laser, a ruby laser, an alexandrite laser, a Ti sapphire laser, a copper vapor laser, and a gold vapor laser.

32. (Original) A method of manufacturing a semiconductor device according to claim 31, wherein the excimer laser is selected from the group consisting of a XeCl excimer laser, a KrCl excimer laser, an ArF excimer laser, a KrF excimer laser, and a XeF excimer laser.

33. (Original) A method of manufacturing a semiconductor device according to claim 28, wherein the first laser beam is emitted from a laser selected from the group consisting of second, third, and fourth harmonics of a YAG laser, a YVO₄ laser, and a YLF laser.

34. (Original) A method of manufacturing a semiconductor device according to claim 28, wherein the second laser beam is emitted from a laser selected from the group consisting of an excimer laser, an Ar laser, a Kr laser, a glass laser, a ruby laser, an alexandrite laser, a Ti: sapphire laser, a He-Cd laser, a copper vapor laser, and a gold vapor laser.

35. (Original) A method of manufacturing a semiconductor device according to claim 34, wherein the excimer laser is selected from the group consisting of a XeCl excimer laser, a KrCl excimer laser, an ArF excimer laser, a KrF excimer laser, and a XeF excimer laser.

36. (Original) A method of manufacturing a semiconductor device according to claim 28, wherein the second laser beam is emitted from a laser selected from the group consisting of second, third, and fourth harmonics of a YAG laser, a YVO₄ laser, and a YLF laser.